

APPLICANT(S): MERON, Gavriel et al.
SERIAL NO.: 10/584,997
FILED: May 1, 2007

REMARKS

The present response is intended to be fully responsive to all points of objection and/or rejection raised by the Examiner and is believed to place the application in condition for allowance. Favorable reconsideration and allowance of the application is respectfully requested.

Applicants assert the present invention is new, non-obvious and useful. Prompt consideration and allowance of the claims is respectfully requested.

Status of Claims

Claims 24-26, 28, 31-39 and 42-48 are pending in the application. Claims 24-26, 28, 31-35, 39 and 43-47 have been amended. Applicants respectfully assert the amendments add no new matter.

Examiner Interview

On August 19, 2010, Caleb Pollack (the undersigned) and Ohad Mayblum (a representative of the assignee) participated in an in-person interview with Examiner Daniels. The Examiner agreed that the amendment to claim 24 presented for discussion (and sent by facsimile beforehand) would overcome the prior art rejections of record. Applicants note that the amendments presented above include minor differences from the amendments discussed during the in-person interview. The changes have been made for the sake of clarity.

Claim Rejections

(a) Chen in view of Foran and Adler

Claims 24-26, 28, 33-37, 39, 43 and 45-48 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Chen et al. (U.S. Publication 2005/0075537), in view of Foran et al. (U.S. Patent 7,027,633) further in view of Adler et al. (U.S. Publication 2002/0177779).

Applicants respectfully traverse this rejection.

During the in-person interview, it was agreed that the proposed amendments to claim 24 overcome the prior art rejections of record. Grammatical and semantic changes were

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made to the version discussed during the interview to create the version submitted with this Amendment. Claim 24, as amended, recites, inter alia:

selecting a plurality of subsets of frames from the in-vivo image stream
for display across a series of time slots;

* * *

across a series of time slots, displaying at least a subset of the selected plurality of subsets of frames from the in-vivo image stream substantially simultaneously in each time slot, wherein the frames of the displayed subset of frames are positioned spatially in order of ascending or descending degree of variation based on the at least one score assigned thereto.

While each of claims 34 and 39 include different limitations from claim 1, for the purposes of the arguments presented herein, each of claims 34 and 39, as amended, include corresponding recitals. In order to establish a prima facie case of obviousness, the prior art references must teach or suggest all the claim limitations. Applicants respectfully submit none of Chen, Foran, or Adler, alone or in combination, teaches or suggests all the elements recited in any of claims 24, 34 and 39.

i. Chen

Chen, for example, does not teach or suggest the elements of “display” that are recited in claims 24, 34, and 39, as amended. The Office Action states that “Chen does not detail how the in vivo...images are displayed” Office Action, p. 3 (July 9, 2010). Concerning the recitals in particular, the Office Action states:

Chen et al. fails to disclose the step of displaying at least a subset of the plurality of frames from the in vivo stream substantially simultaneously, wherein the subset of frames are positioned spatially in order of ascending or descending degree of variation... [Id.]

What the Examiner found lacking in Chen in the previous Office Action, and as repeated above, is recited in claim 24 as currently amended. Claims 34 and 39 make analogous recitals.

Claims 24, 34 and 39 also recite elements, for example, of “selecting a plurality of subsets of frames from the in-vivo image stream for display across a series of time slots” [Emphasis provided], which are further lacking in Chen.

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Accordingly, Chen does to teach or suggest all of the elements recited in claims 24, 34, and 39, as amended.

ii. Foran

Foran cannot cure the defects of Chen. Foran teaches a display system that is diametrically opposed to the display recited in claims 24, 34 and 39. Foran discloses a microscope system in which a single biological sample is displayed against template images of possible pathologies. In contrast, each of claims 24, 34 and 39 recites multiple captured images, “frames from an image stream”, being displayed all at once, or “substantially simultaneously ... across a series of time slots”. Such a recital to display multiple images at the same time is not taught or suggested by Foran.

In contrast to a display of multiple images “substantially simultaneously” and “across a series of time slots”, emphasis in Foran is on capturing and analyzing a single image. As Foran states, the “system described herein may include a microscope that provides an image of a biological specimen in digital form.” [Foran, Col. 2, ln. 24-25]. In operation, when an image is captured for diagnosis in Foran, that image is matched one at a time against images from a pathology database. For example, Foran states, “... server retrieval 416 performs feature matching and retrieves relevant images and clinical data from the server indexing 414 as described with reference to FIG. 5... [Id., Col. 13, ln. 14-17]. Foran describes an embodiment allowing for “an archival system” for, e.g., “automated management of additional biological specimens for addition to [a] database” [Id., Col. 2, ln. 52-56]. This does not teach or suggest, for example, “across a series of time slots, displaying at least a subset of the selected ... frames from the in-vivo image stream substantially simultaneously” as is recited in claim 24 as amended (similar recitals being in claims 34 and 39). The description in Foran where “one or more remote users receive the image of the biological specimen and provide input” [Id., Col. 2, ln. 42-45 (emphasis provided)] reveals, again, the priority in Foran of analyzing a single slide, not a system to analyze multiple test slides.

Figure 6 in Foran shows the display of its single test image. That display shows one test image matched against images from a pathology database. Emphasis is on the single test image as Foran states:

The current image workspace 602 may display an image currently under investigation. A user may, through the current image workspace 602

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navigate through an entire image or, for example, identify a region of interest within the image. [Id., Col. 17, ln. 52-56 (Emphasis provided)]

Thereafter Foran states, “A user may also navigate through data sets of a plurality of images available to the system,” [Id., ln. 56-57] but, given the window for the specimen provided in Figure 6 (see “current image workspace 602” and “processed image workspace 604”) the plurality of images would, necessarily, have to be viewed (and processed) one image at a time. Such a focus on a single “image under investigation” disclosed by Foran does not teach the display of “frames from an in-vivo image stream” where a “subset of the selected ... frames” of the image stream are displayed “substantially simultaneously”, as is recited in claims 24, 34 and 39, as amended.

Adler does not cure the defects of Chen and Foran.

Accordingly, none of Chen, Foran, or Adler, alone or in combination, teaches or suggests all of the elements of any of claims 24, 34 and 39, as amended. Claims 24, 34 and 39, as amended are thus allowable.

Each of claims 25-26, 28, 33, 35-37, 43 and 45-48 depends from one of claims 24, 34 and 39 and further includes all of the limitations of those independent claims. Accordingly, each of claims 25-26, 28, 33, 35-37, 43 and 45-48 is likewise allowable.

For at least the reasons above, Applicants respectfully request reconsideration and withdrawal of the rejection of claims 24-26, 28, 33-37, 39, 43 and 45-48 under 35 U.S.C. §103(a) as being unpatenable over Chen, Foran, and Adler.

(b) Balabanovic, Shibnuma, Iddan and Bille

Claims 31 and 42 stand rejected under 35 U.S.C. §103(a) as being unpatenable over Chen in view of Foran, in view of Adler and further in view of Balabanovic et al. (U.S. Pat. 6,976,229). Claim 32 stands rejected under 35 U.S.C. §103(a) as being unpatenable over Chen, in view of Foran, in view of Adler, and further in view of Shibnuma (U.S. Pat. 5,642,157). Claim 38 stands rejected under 35 U.S.C. §103(a) as being unpatenable over Chen in view of Foran, in view of Adler and further in view of Iddan et al. (U.S. Pat. 6,764,440). Claim 44 stands rejected under 35 U.S.C. §103(a) as being unpatenable over Chen in view of Foran, in view of Adler and further in view of Bille (U.S. Publication 2005/0110948).

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Each of claims 31, 32, 38, 42, and 44 depends from one of claims 24, 29 and 34, which as discussed are allowable over Chen, Foran and Adler. The defects of Chen, Foran and Adler are not cured by Balabanovic, Shibnuma or Bille.

Accordingly, each of claims 31, 32, 38, 42 and 44 is allowable.

For at least the reasons above, Applicants respectfully request reconsideration and withdrawal of the rejections of claims 31, 32, 38, 42, and 44 under 35 U.S.C. §103.

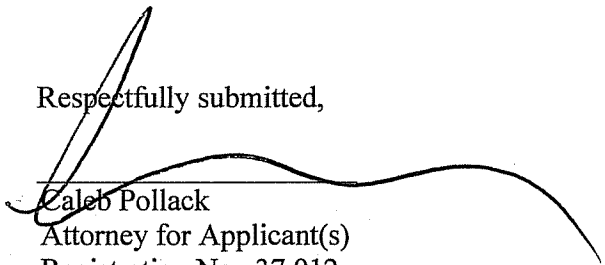
CONCLUSION

In view of at least the foregoing amendments and remarks, Applicants assert the claims are allowable. Favorable reconsideration and allowance are respectfully requested.

The Examiner is invited to telephone the undersigned to discuss any still outstanding matters with respect to the present application.

No fees are believed due in connection with this paper. If any fees are due, please charge such other fees and all fees associated with this paper to deposit account No. 50-3355.

Respectfully submitted,



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